

Integrated Pest Management for Commercial Horticulture

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Introduction

Most people are used to the idea that wasps and bees can sting and rarely think about caterpillars which also sting. In the case of Lepidoptera (moths and butterflies), it is not the adult stage that causes the painful sting, but the larval stage. The pain inflicted on humans is not from an ovipositor (stinger) like a bee or wasp but rather through the hairs on the body of the caterpillar.

How Do Caterpillars Sting?

Stinging caterpillars bear specialized nettling or urticaceous setae or spines. These structures are hollow and contain toxins from poison-gland cells. The caterpillars use these hairs as defensive structures for protection against predators. The sting of the caterpillar inflicted on humans is not from

a deliberate attack, but the result of casual contact with toxin-bearing setae or spines. When brushed against, these structures break away, releasing toxins. In some cases, broken setae may penetrate the skin. Sometimes the toxins spill out and spread on the surface of the skin causing inflammation.

Reactions to Stings

Reactions to caterpillars vary from person to person, but a sting is a sting. In some cases the contact causes itching or burning sensations. Some people develop dermatitis, a rash, lesions, pustules, inflammation, swelling, or numbness at or around the area of contact. In extreme cases a person can have a reaction with fever, nausea and intense pain. The type of reaction depends on the individual person's susceptibility and on the species of caterpillar, degree of contact, and type of toxin. Reactions may be especially severe for individuals with allergies or sensitive skin. Some people may consider stinging caterpillars only a mild nuisance at best.

Flannel Moth Caterpillars

Flannel moth caterpillars, like slug caterpillars, look different than the typical lepidopterous larvae. Instead of having 5 or less than 5 pairs of prolegs like other caterpillars, this family has seven pairs of prolegs. Flannel moth caterpillars have long, fine, silky, venomous setae (hairs) which can cause serious skin irritations. They do not have any large and threatening horns-like projections. Flannel moth larvae feed on a variety of trees and shrubs. Young larvae feed gregariously; older larvae are often found feeding singly. Usually, they are not found in high enough numbers to cause much damage.

Two species of flannel moths, the puss caterpillar and the caterpillar of the white flannel moth, are found in Maryland.



Some stinging caterpillars, like puss caterpillars, come in several color forms

Puss Caterpillar (*Megalopyge opercularis*)

In 2008, we received quite a few reports of the puss caterpillar (the adult is called the southern flannel moth) causing painful stings to people on the Eastern Shore, especially in Cecil County and on Kent Island in Queen Anne's County. The puss caterpillar looks like a very shaggy dog – a look that is unlike your typical caterpillar. This caterpillar is one of the more bothersome stinging caterpillars found in Maryland. Contact may produce severe reactions with severe burning of the skin. Some people report severe pain. The hairs can cause reddened flesh and inflammation. Some people develop lesions and swellings on the skin exposed to the caterpillars. People who come into contact with the caterpillars report pain that persists from one to several hours. In some instances, such as a few people on Kent Island in 2008, victims have required medical attention.



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A lighter form of a puss caterpillar

The larva is urticating in all instars. Recently molted skins retain stinging capabilities. The tufts of hair (which can be grayish to light to dark brown) hide venomous setae. These hairs form a roof-like peak over the back of the body and taper rearward to form what looks a lot like a tail. There are small patches of white on each side of the body. Larvae grow to be about one inch long, but because of the thick tufts of hair, can appear to be much larger.

Puss caterpillars feed on foliage of a variety of broadleaf trees and shrubs. We had reports of this caterpillar defoliating a large number of American hollies on an individual farm in Kent County in 2007 and in 2008. Some other common tree hosts are apple, elm, hackberry, maple, oak, pecan, and sycamore. Only one generation occurs in Maryland. Larvae are present in August through September.

White Flannel Moth (*Norape ovina*)

The caterpillar of the white flannel moth is the hackberry leaf slug which is a colorful caterpillar. The larvae have stinging hairs in six small tufts found on each segment. The larvae are commonly found feeding on redbud but also can be found on red maple, black locust, and hackberry foliage in Maryland. The hairs are mildly urticating and may cause stinging if skin is exposed to the hairs.



Hackberry leaf slug caterpillars feeding on dogwood leaves

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Slug Caterpillars

Slug caterpillars do not look like your typical caterpillar. The head is hidden within the thorax and the thoracic legs are reduced in size. The prolegs (fleshy appendages on the abdomen) are modified to sucker-like lobes without crochets. Most species tend to be solitary feeders and seldom occur in high enough numbers to cause significant damage to tree foliage.

Saddleback Caterpillar (*Sibine stimulea*)

The saddleback caterpillar is one of the brightest colored stinging caterpillars found in the United States. Its distribution is throughout the East Coast of the United States. The larvae can be found feeding on several herbaceous annual and perennial plants such as astilbe, obedient plant, dahlia, canna and phlox, to name a few. The larvae are very distinct in coloration. The larvae are brown with a pronounced bright lime-green saddle covering the center of the body. The caterpillar has hair-like spines that connect to poison glands. Four very prominent projections with spines are found on the anterior and posterior of the caterpillar. If you have gloves on you can pick up the caterpillar and examine it closely. If you look at the bottom of the caterpillar you will notice that it has a slug-like ventral side (bottom). The larvae can be found feeding on a number of weed and cultivated herbaceous perennial species as well as trees and shrubs. We have also had reports of them feeding on tropical plants placed outside for the summer. The damage to plants from feeding is generally insignificant. The sting from the spines on the body of the caterpillar is painfully unforgettable. It is a great caterpillar to examine in the landscape, but avoid physical contact with the caterpillar unless you have protective gloves. They are most often found in August through early October.



The saddleback caterpillar is brightly colored so look closely for it when working herbaceous and woody plants in the landscape

Hag Moth Caterpillar (*Phobetron pithecium*)

The hag moth caterpillar is another slug caterpillar found in Maryland. It looks like a dried, hairy leaf that can cause a stinging sensation in humans. The full-grown caterpillar is brown, hairy, and about half an inch long. Along the side of the body there are nine pairs of fleshy lateral lobes (long and sometimes twisted) with hidden urticating setae. It gets its common name from the disheveled lobes which are said to resemble hair like the locks of a hag.



A hag moth caterpillar

Generally a solitary feeder, this caterpillar can be found feeding on foliage of several trees including apple, ash, birch, dogwood, hickory, oak, and willow from July into fall.

Giant Silkworms

This family contains some of the largest and most impressive looking of our native caterpillars. Some species spin large, thick cocoons of silk. Many caterpillars are brightly colored and variously armed with conspicuous “horns” and spines. Two species that sting, the io moth and buck moth caterpillars, occur in Maryland.

Io Moth Caterpillar (*Automeris io*)

This caterpillar is a generalist feeder and can be found on many herbaceous perennials and woody plants in the landscape. Reported tree hosts include apple, black locust, cherry, dogwood, elm, hackberry, hickory, maple, oak, sycamore, and willow. Larvae grow to be two to three inches long. The head and body are yellowish green. The thoracic legs and prolegs are very distinctly red. Caterpillars have distinct white and reddish lines along each side of the body. The raised tubercles are very ornate with a whorl of green branched spines. One generation occurs in Maryland each season. Larvae are present August through October.

Buck Moth Caterpillar (*Hemileuca maia*)

This caterpillar is often black and speckled with white dots, but it can also be almost white. The females lay eggs on oaks and caterpillars feed gregariously until the third instar. In the fourth and fifth instars, they start to separate and often move onto other woody plants such as cherry and willow to continue feeding. There is one generation per year.



Buck moth caterpillar
Photo: Susan Ellis, Bugwood.org

Just Be Aware and Cautious

Being educated on what these stinging caterpillars look like and avoiding contact with bare skin is all you really need to do for these stinging caterpillars. A customer who has a bad encounter with a stinging caterpillar may want you to spray for control, but suggest restraint and just avoid contact with them.

Reference

Wagner, David L., *Caterpillars of Eastern North America*, Princeton University Press, 2005.

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